



# Growing Azaleas and Rhododendrons

*Diane Relf, Extension Specialist, Environmental Horticulture, Virginia Tech*

*Bonnie Appleton, Extension Specialist, Nursery Crops, Virginia Tech*

*Reviewed by David Close, Consumer Horticulture and Master Gardener Specialist, Horticulture, Virginia Tech*

The spectacular spring flowers of azaleas and rhododendrons make them among the most popular garden shrubs. However, azaleas and rhododendrons are shrubs for all seasons. Throughout the summer and fall the leaves add a pleasing, deep-green color to the garden. Some deciduous azaleas add bright fall color before the leaves drop. In winter, some varieties stand out with large, evergreen leaves.

Although all azaleas and rhododendrons are classed as *Rhododendron* by plant taxonomists, the name “azalea” is commonly used for native deciduous species and many evergreen hybrid types. Generally “rhododendron” is used for those species that have large, evergreen, leathery leaves and flowers distinctly clustered in terminal groups. When a sharp division cannot be made, it is always correct to call any of them rhododendrons. Whatever name is used, the culture required for all these plants is very similar. The same cultural practices may also be applied to blueberries, pieris, heather, holly, and other plants that prefer acid, organic soils.

## Location

Most azaleas and rhododendrons are at their best in fairly mild, humid climates. While varieties exist for all Virginia locations, selecting a good site is very important, as is selecting good quality plants.

**SLOPE.** A site sloping to the north or east is usually best, because it is protected from drying south and west winds. Thus, plants are less subjected to rapid temperature changes in late fall or early spring.

**WIND.** Always plant azaleas and rhododendrons where they get wind protection. Buildings and slopes provide good barriers. Evergreen shrubs or trees such as pine, juniper, or spruce planted to the south or west of rhododendrons protect them and make good backgrounds for showing off the flowers. Plants not given protection from the wind often develop leaf scorch or splitting of the

bark on the stems. Avoid corners of buildings where wind tends to be stronger.

**SHADE.** Many people think of azaleas and rhododendrons as shade lovers. Yet dense shade is not satisfactory. Filtered sunlight is ideal, but morning sunlight with shade after 1 p.m. is satisfactory and desirable in the Tidewater Virginia area. Plants may survive continuous shade if trees have branches pruned high. Fences, shrubbery, or screens may also give protection from afternoon sun.

Some deciduous azaleas are less sensitive to sun, and should be used if the location receives full afternoon sun. However, in full sun delicate flower colors will bleach quickly even though the plants may grow well.

## Soil And Its Preparation

Proper placement alone is not enough. Azaleas and rhododendrons must have soil that is prepared carefully and thoroughly. Roots of azaleas and rhododendrons are very delicate and unable to penetrate heavy or rocky soils.

**DRAINAGE.** Because the delicate roots of azaleas and rhododendrons are easily destroyed, excellent drainage is important. To test drainage, dig a hole six inches deep in the bed and fill it with water. If the water has not drained from the hole in four hours, install drainage tile to carry away excess water, or build raised beds.

**STARTING THE BED.** Planting azaleas and rhododendrons in groups rather than individually permits more efficient use of prepared soil. Don't place the bed close to shallow rooted trees such as maple, ash, or elm. Feeder roots rapidly move into improved soil and compete for water and plant food.

For best results, dig out the bed 18 inches deep and at least 30 inches wide. Plants should be spaced 3 to 4 feet apart, and at least 18 inches from the edge of the bed.

**SOIL ACIDITY.** Azaleas and rhododendrons must have an acid soil. Most of them thrive best at a soil pH

between 4.5 and 6.0. In Virginia most soils have a native acid reaction. However, alluvial or river bottom soils may have a more alkaline reaction and need to be made more acid to grow azaleas and rhododendrons well.

Soils previously limed heavily for a lawn or garden may need the pH lowered. Mortar or similar building materials mixed into the soil close to foundations may increase pH. When the pH is unknown, it can be determined by taking a soil sample to any cooperative Extension Service Office for testing.

**CORRECTING pH.** If the pH is too high, the soil may be made more acid by applying agricultural sulfur or iron sulfate. The amount the pH will change varies with different soils, but generally about one and one-fourth cups of iron sulfate or two and one-half pounds of agricultural sulfur per 100 square feet will lower the pH one unit. For example, if the soil pH tests at 6.5, this treatment should lower it to 5.5 in a silt loam.

Soils that are too acid (below pH 4.5) may easily be made less acid by adding ground limestone.

**MIXING THE SOIL.** A major change with regard to growing azaleas and rhododendrons is the way in which the soil is prepared. We were once instructed to add large quantities of organic matter (especially peat moss) to the planting soil. That recommendation has changed.

The best soil in which to grow azaleas is good quality, loamy topsoil. In areas with heavy clay or excess sand, good quality topsoil can be added or used to replace the poorer soil only if the entire soil area is treated that way. Amendments should not be added just in individual planting holes because water movement will be impeded. If topsoil is added to the planting bed, be sure to check the pH and make any adjustments that may be necessary.

## Planting

**SETTING THE PLANTS.** Most rhododendrons and azaleas are purchased with soil around the roots either in containers, or “balled and burlapped.” They can be planted during the spring and fall or in summer if kept well watered.

Dig the hole in the prepared bed double the diameter of the root ball or container, and the same depth. In fact, the ball can be set two inches higher than the surrounding soil to allow for settling. The exposed root ball can be covered with mulch.

Never plant azaleas or rhododendrons so deeply that the plant stem is covered deeper than it had been growing in

the nursery. Planting too shallow is better than too deep. Soak well after planting and firm the soil around the ball.

**MULCH.** Most azaleas and rhododendrons are shallow rooted and need heavy mulch to conserve moisture around the roots, to minimize winter injury, and to prevent injury from cultivation. Coarse materials such as partly decomposed oak leaves or pine needles are ideal. Oak shavings, hardwood chips, aged sawdust, or sphagnum peat moss may also be used satisfactorily. A two-inch depth of mulch is satisfactory.

**FERTILIZATION.** There is little need for fertilizing at planting time. A light application of a fertilizer formulated for acid-loving plants may be added to the surface before the mulch is applied. Use no more than 2 pounds per 100 square feet, or follow directions on the package.

## Other Planting Methods

**SINGLE PLANTS.** To prepare for a single specimen, dig a hole twice the diameter of the root ball or container, and only as deep (in heavy soils, dig it an inch or two more shallow and cover the exposed root ball with mulch). Use only the existing soil, broken up to provide good aeration, as backfill. In poor soil conditions, a planting bed will be necessary in order to incorporate good topsoil. If only the soil in the individual planting hole is amended, water may not drain away well after heavy rains, or the soil in the hole may dry out too quickly under dry conditions. Once planted, water thoroughly and apply mulch.

**RAISED BEDS.** In some soils or locations, raised beds may be the only way to provide adequate drainage. They should be raised at least six to 12 inches above the normal soil grade using good quality topsoil.

## Maintaining The Planting

Rhododendrons and azaleas require little care once they are properly established. Good heavy mulch will keep down weeds. No cultivation should be done because the shallow, fine roots are easily damaged.

**FERTILIZATION.** Avoid using general garden fertilizers for rhododendrons, azaleas, and other acid loving plants. Use those specially formulated and follow directions. Fertilizers supplying ammonium nitrogen are best.

Rhododendrons and azaleas grow well naturally at relatively low nutrient levels. Therefore, fertilization should be done carefully or the fine, delicate roots close to the soil surface will be damaged. A fertilizer analysis similar to 6-10-4 applied at 2 pounds per 100 square feet to the

soil surface is usually adequate. Cottonseed meal is also a good fertilizer.

Fertilizing should be done in April or May, but don't fertilize after July 1. Late summer fertilization may force out tender fall growth that will be killed by the winter.

**ACIDITY.** Soil acidity must be maintained to insure good growth. If the soil pH is above 6.0, apply iron sulfate or agricultural sulfur to the surface. The amount to apply will depend on the existing pH, but in all cases apply only a small amount at any one time.

**MULCH.** The thickness of the mulch must be maintained but should not be excessive. As the old mulch decomposes, add new mulch. This is best done in the late fall after plants are completely dormant. Mulch should be moved away from direct contact with stems in early fall to allow hardening during the onset of cold weather. Replace and replenish mulch before a hard freeze. If wood chips, chopped bark, or only partially decomposed sawdust are used, fertilize with about one-quarter pound of ammonium sulfate for each bushel of material used. The fertilizer is best applied in the spring.

**HERBICIDES.** Several herbicides are registered for use in weed control around azaleas in the home landscape. Always be sure to read the label for correct application rates and times and to see if any cultivars are listed as ones that may be damaged. Consult publication 456-004, *Pest Management Guide for Home Ornamental Plants*, for a list of appropriate herbicides.

**WATERING.** Over-watering in sites where drainage was faulty has killed many rhododendrons. If water does not drain away readily, drain tiles should be installed or a raised bed built.

Avoid excessive irrigation in fall. Plants kept dry in September will tend to harden off and be better prepared for the winter. If the fall has been excessively dry, watering should be done after the first killing frost. At that time watering will not reduce winter hardiness but will prepare the plant for winter. The soil should be thoroughly moist before cold weather sets in. The best time for fall watering is about Thanksgiving. During the growing season be sure that at least one inch of water (from rain or irrigation) is available per week.

**PRUNING.** There is little need for pruning azaleas and rhododendrons. If growth becomes excessive, reduce the size with light pruning. It is important to remove the flower stems on rhododendrons as soon as flowering is

complete, although this practice is not necessary on most azaleas. Failure to do this will reduce flowering the following year. Break out only the dead flower cluster, not the young buds clustered at its base.

Azaleas sometimes branch poorly and form a loose, open shrub. The plants' form can be improved by pinching out the soft, new shoots of vigorous growing plants. Do not pinch after July because flower buds will not have time to develop for the following year.

**WINTER PROTECTION.** The two winter enemies of evergreen rhododendrons and azaleas are cold wind and sun. Most damage shows up as split bark, dried leaves, or dead or damaged flower buds. If hardy types are selected and proper locations are chosen, little or no winter protection is needed. If existing varieties show winter damage, provide some protection. Don't be alarmed when leaves curl and droop on cold days; that is normal.

Discarded Christmas trees may be used to protect plants. Branches can be anchored in the ground to shield the rhododendron from wind and sun. Screens may be built of burlap or other materials to provide shade and wind-break. Protection must remain loose and airy throughout the winter. Small plants should not be covered with large mounds of leaves. Masses of leaves may begin to decay and smother the plant beneath them. Leaves may be pulled up around the stems in late fall but should not cover the entire plant. Temporary fences made of lath or snow fencing are effective in providing necessary wind-break and light shade.

## Troubles

**SUNSCALD, SCORCH.** Large-leafed evergreen rhododendrons are sometimes subject to sunscald during winter. This is most likely to happen if the plant did not receive ample moisture before freezing in fall. The exposed portions of the leaf (usually the central portion when the leaf was curled) may become brown. This browning may also appear on the edges of some leaves. To prevent scorch, plants should be well watered in the fall if rainfall has been sparse, protected from drying winds, mulched well, and given some shade.

**IRON CHLOROSIS.** If leaves turn yellow in the sections between the veins, but the veins remain green, iron deficiency is the cause. If the entire leaf turns yellow with some browning, other problems are suggested, for example, calcium deficiency. Chlorosis may also result from soil that is not acid enough, or has poor drainage, nematodes or other conditions that cause root or stem injury.

Iron chlorosis can usually be temporarily controlled by spraying the foliage with an iron (ferrous) sulfate solution or with chelated iron. If iron sulfate is used, apply at a rate of one ounce per gallon of water. If a chelated iron product is used, follow the manufacturer's directions. A slower, but more permanent control can be obtained by applying iron to the soil rather than the foliage. Use two pounds iron sulfate per 100 square feet (1/8 cup per 10 square feet) or chelated iron according to directions. Conditions leading to chlorosis such as poor drainage or alkaline soil must also be corrected. One and one-fourth cups of iron sulfate per 100 square feet applied to the beds each fall appear to help harden growth for the winter and also help prevent iron chlorosis.

**INSECTS AND DISEASES.** There are several insects and diseases that commonly bother azaleas, and to a lesser extent, rhododendrons, in Virginia. The most common insect problem is the azalea lacebug, but also troublesome can be aphids, leaf miners and tiers, and scale.

The most common diseases on azaleas are *Phytophthora* root and crown rot and *Ovulinia* petal blight. In addition to these, rhododendrons can also be bothered by *Botryosphaeria* canker and dieback. Consult publication 456-004, *Pest Management Guide for Home Ornamental Plants*, for a list of control measures.

**STEM BARK SPLITTING.** This problem results from rapid temperature changes and freezing. The bark above ground splits and may peel off, with branches dying above the injury. Death may not occur for one or two years. Winter protection may help, but generally the best remedy is to plant reliably hardy varieties or prune out affected branches of injured plants. When checking a reference for hardiness of a particular rhododendron or azalea, keep in mind that most of Virginia is in Zone 7. Southeastern Virginia (the Tidewater area) is warmer and is in Zone 8. The western border areas are colder and in Zone 6.

## Rhododendron Varieties

There are many beautiful rhododendrons. However, some are not reliably cold hardy or heat tolerant in Virginia. Generally more varieties may be grown in the milder climate of southern Virginia. (Except in Tidewater where they cannot tolerate the summer heat.) The following selected varieties are some of the most reliable, although not always the most beautiful.

Of the many hybrids available, those derived from *Rhododendron catawbiense*, called Catawba hybrids, have the greatest hardiness. New varieties may be superior to those

listed, but establishing their true adaptability takes many years. The collector may be willing to take risks with tender plants, but the beginner should always select varieties well adapted to the local environment.

'ALBUM' – White flowers in round trusses. Narrow leaves, tall, vigorous.

'ALBUM ELEGANS' – Soft lilac fading to white, late flowering, a *R. maximum* hybrid.

'ALBUM GRANDIFLORUM' – White with a lavender tinge later fading to white.

'AMERICA' – Dark red with a ball-shaped flower cluster. Broad, bushy plant, very hardy.

'ATROSANGUINEUM' – Red with purple markings. Hardy.

'BOULE DE NEIGE' – White, early. Slow growing, but develops compact, large plant.

'BOURSAULT' – Compact grower, buds purple, turning rosy-lilac.

'CHARLES DICKENS' – Crimson red with purplish markings.

'ENGLISH ROSEUM' – Lilac pink, large foliage, vigorous upright growth.

'EVERESTIANUM' – Purplish-pink with green markings. Hardy.

'IGNATIUS SARGENT' – Purplish red with brown markings.

'LADY ARMSTRONG' – Deep purplish pink with red markings.

'LORD ROBERTS' – Medium height, red flowers with black blotch.

'MRS. CHAS. S. SARGENT' – Deep rose spotted with yellow. Cold hardy.

'NOVA ZEMBLA' – Red flowers similar to 'America.' Cold and heat tolerant.

'P.J.M.' – Early flowering, purple, small, dark foliage.

'PURPLE SPLENDOR' – Very deep violet purple with darker blotch. Very hardy.

'RAMAPO' -- Small, violet blue flowers. Low, spreading plant. Very hardy. Tolerates sun and shade.

## Evergreen Azalea Varieties

The evergreen azaleas need protected sites, and winter protection is necessary in many areas. In Southeastern Virginia, the number of varieties that may be grown increases, and the need for protected sites and winter protection decreases.

**KURUME HYBRIDS.** Most popular of the evergreen azaleas are the Kurume hybrids. They are popular for forcing in pots and for planting outdoors. In the southern United States they become large, showy shrubs in the spring. They are moderate-growing plants with dense, twiggy growth. Hardiness varies considerably among the many varieties. Here are some of the best for Virginia.

‘CORAL BELLS’ – Flowers are hose-in-hose (one blossom inside another) which give the effect of semi-double flowers. Vivid pink color. Poor exposure will cause leaf scorch and twig dieback.

‘FLAME’ – Orange red with dark blotch.

‘HERSHEY RED’ – Bright red double.

‘HINO-CRIMSON’ – Vivid red flowers on a low, cushiony plant. One of the most hardy.

‘HINODEGIRI’ – Variety from which Hino-crimson was selected. Very similar, but color not as intense red.

‘MOTHER’S DAY’ – Vivid red, faint brown spotting, hose-in-hose to semi-double.

‘PINK PEARL’ – Large, hose-in-hose, soft pink flowers. Plant is low and spreading.

‘SALMON BEAUTY’ – Salmon-pink hose-in-hose flowers.

‘SNOW’ – Large, single white flowers. Most reliable of white flowered Kurumes.

‘TRADITION’ – Deep pink, hose-in-hose, mid-season, medium growth

**OTHER HYBRIDS.** Many other groups of evergreen hybrid azaleas exist that can be grown in Virginia. These hybrid groups include Gable hybrids, Glenn Dale hybrids, Robin Hill hybrids, and the Girard hybrids. Some of the best known cultivars of some of these hybrids for use in Virginia include: ‘Fashion’ (salmon pink), ‘Delaware Valley White’ (white), ‘Pleasant White’ (single white), ‘Elsie Lee’ (semi-double lavender), ‘Girard’s Rose’ (single rose), ‘Rosebud’ (rose pink), ‘Poukhanense’ (single purple), and ‘Stewartsonian’ (single orange red). One group gaining in popularity is the Japanese Satsuki

hybrids that have very interesting flower colors and color patterns, including spots, stripes, and some flowers in which half the petals may be one color, half another.

Among the most popular cultivars used in Virginia are ‘Gumpo White’ and ‘Gumpo Pink’.

## Deciduous Azalea Varieties

In areas where the evergreen azaleas are marginal, deciduous azaleas are an alternative. They are colder hardy and provide a mass of color in spring, along with many yellows to reds in fall leaf colors. Different species vary widely in hardiness, however. Normally, those found in nurseries will be the ones best suited to the area. Remember that there are no bargains in azaleas and rhododendrons. Choose only vigorous plants of good varieties. Beginners should choose some of the old standards and later try some of the newer introductions.

Deciduous azalea varieties for Virginia include:

**EXBURY (KNAP HILL) HYBRIDS** – Becoming extremely popular. Many varieties have good hardiness. Available in pastel shades ranging from cream, through pink to yellow and orange. May have trouble with heat and dryness in Zone 8 (Tidewater area of Virginia).

**ROYAL AZALEA (*R. schlippenbachii*)** – A reliably hardy azalea with large, fragrant, rose pink flowers. Foliage has good autumn color although may sometimes be burned by late summer heat.

**MOLLIS HYBRIDS (*R. x kosteranum*)** -- slightly more tender and smaller than Exbury, but much varietal variation. Colors mainly in yellow, apricot, orange, and red.

**GHENT HYBRIDS (*R. x gandavense*)** – Available in a wide range of colors. Exbury hybrids are an improvement of the older Ghent hybrids. Best in cooler areas of Virginia.

**FLAME AZALEA (*R. calendulaceum*)** – The showiest of the deciduous American azaleas, retaining their flowers for nearly two weeks. Available in yellows, apricot, salmon, pinks, oranges, and reds. Excellent for mass planting and to create naturalistic plantings.